Tomes and De Morgan's previous researches. Whatever doubt existed is now removed by the careful application of magenta.

MULTIPLICATION OF THE CELLS.

This *I believe* is accompanied by division of the capsule, the septa when fully formed being continuous with the surrounding matrix.

Microscopic preparations and diagrams showing all that has been now advanced, are around you for inspection.

ART. XXXVII.—*Remarks on the Australian Fish of the Genus Arripis.* By PROFESSOR M'COY, F.G.S., &c. &c.

Read 19th September, 1864.

Professor M'Coy described the generic characters of the genus *Arripis* so named, by Jenyns, from the supposed absence of the fan-like structure at the base of the scales which Professor M'Coy, however, showed to be generally present. Branchiostigals seven; all the teeth villiform; teeth on the palatine bones and vomer; tongue smooth; one dorsal with nine spines; anal with three; preoperculum denticulated. Pyloric appendages said, by the most recent writers, to be from seventeen to fifty, Professor M'Coy found to be one hundred and sixty.

The species were described as *Centropristes* by Cuvier, Richardson, &c., under the following names—

Centropristes Georgianus. (Cuv.)
„ *Salar.* (Richardson.)
„ *Tasmanicus.* (Homb.)
„ *Truttaceus.* (Cuv.)
Perca Trutta. (Cuv.)

and probably *Perca marginata.* (Cuv.)

Of these, the *C. Georgianus,* Professor M'Coy found to be the adult form. It is the fish improperly called "salmon" by the colonists, the eating of which is supposed to be, at certain times and to certain people, more or less poisonous, although certainly good for food under other circumstances not yet understood. It has a nearly uniform pale olive colour.

The *C. Salar* is popularly called "salmon trout" by the colonists, and is recognised from the first by its smaller size and rows of large round brass-like spots on the sides. The species was separated, by Sir J. Richardson, from the former on account of the differences in the number of the fin rays, the spotting of the body, and the greater diameter of the eye as compared with the length of the head and the distance between the orbits. All these characters Professor M'Coy proved to be merely the characteristics of the young fish of the *C. Georgianus*.

The *C. Truttaceus* of Cuvier was mainly characterized by the posterior edge of the preoperculum not being denticulated; and this also was proved by the demonstration of the characters in several specimens to be a character of the very young of the same species, *C. Georgianus*, with which it also should, as well as the *Perca Trutta* of Cuvier, be united.

The very young when examined alive have the caudal fin yellow with a black margin. These colours fade quickly in spirit or on dried skins, so this colouring noted by Cuvier on a drawing from life of a fish of which he had never seen a specimen, gave rise to the species *Perca marginata*, which, as all the other characters also are those of young *Centropristes Georgianus*, Professor M'Coy proposed to consider a synonym of that species, thus reducing, by extensive observations on recent specimens, six supposed species of Australian fish to one.

ART. XXXVIII.—*The Wealden Formation of Europe, as Illustrated by the Physical Features of Port Phillip Bay.* By THOMAS HARRISON, ESQ.

[Abstract of Paper read Oct. 31st, 1864.]

The characteristics of the Wealden Formation, in reference to its probable history, its geographical position, geological structure, and the peculiarity of its brackish and fresh water beds, intercalated between two extensive marine formations, were briefly and generally described.

The hypothesis of Lyell, of a gradually sinking delta, was briefly reviewed, and the points noted in which some of the phenomena observed were not satisfactorily accounted for by such a cause.